

NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION CROP ROTATION (ACRE)

CODE 328

MONTANA CONSERVATION PRACTICE SPECIFICATION / JOB SHEET

FLEXIBLE LEGUME–CEREAL CROPPING

_____ COOPERATOR	_____ FIELD(S)
_____ TRACT(S)	_____ DATE

DEFINITION: A sequence of adapted crops designed to maintain, protect, or improve the health and productivity of the soil and related natural resources.

Flexible Legume-Cereal Crop Rotation: In this rotation a legume crop is seeded in lieu of fallow in the standard dryland crop-fallow or flexible crop rotation for purposes of building soil quality, soil fertility, organic matter, weed control, or providing forage. The legume is seeded as early as possible, and then the management of the legume is flexible, dependent on growing season precipitation.

PURPOSE: As part of a conservation management system, a crop rotation is an essential practice for all land where agricultural crops are grown to reduce erosion, maintain or improve soil organic matter, manage the balance of plant nutrients, improve water use efficiency, manage saline seeps, manage plant pests (weeds, insect, and diseases), provide food for domestic livestock, and provide food and cover for wildlife.

CONSERVATION MANAGEMENT SYSTEM: A conservation crop rotation is established as part of a conservation management system to address the soil, water, air, plant, animal, and human needs as related to the owner's goals and objectives. It is important to consider nutrient and pest management, crop residue management, agricultural waste utilization, and other supportive conservation practices when designing a crop rotation. A properly designed crop rotation can also provide substantial forage for livestock and improve soil health and the over all sustainability of the agricultural production system. A crop rotation is most effective in providing conservation benefits when used in combination with other agronomic or structural practices.

If crop residues are to be removed, or low residue crops are grown, protection against erosion may be provided by fall seeded small grain crops, cover crops, legumes, grasses, or the addition of residue or manure. Crops should be planted whenever there is adequate soil moisture to prevent the development of high water tables. Fallow only when soil moisture is inadequate to produce a crop. During fallow years leguminous crops will be planted. Subsoil moisture should be monitored and fallow cover terminated by chemical or mechanical means so as to allow adequate subsoil moisture for the following year's crop. Incorporate legumes thoroughly into the soil while still allowing enough residue on or near the surface to prevent erosion. As a rule of thumb, vegetation should be terminated when stored subsoil moisture in the profile is depleted to 3-4 inches. Grazing of leguminous cover may also be scheduled.

WILDLIFE: Crop rotations can enhance wildlife objectives depending on the vegetative species used and management practiced. Consider using species that can provide food and cover for important wildlife.

Specification MT328-C-2 Flexible Legume–Cereal Cropping

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MT-ECS-328C-2
07/2002

CROP DIVERSITY INDEX:

Benchmark Index: _____

Planned Index: _____

CROP ROTATION INTENSITY RATING:

Benchmark Index: _____

Planned Index: _____

FERTILIZER PLAN: (See FOTG, Section IV, Practice Specification 590–Nutrient Management)

CROP ROTATION	PROJECTED YIELD	N	P	K	OTHER	APPLICATION DATE	APPLICATION METHOD
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

Additional fertilizer information: _____

WEED CONTROL PLAN: (See FOTG, Section IV, Practice Specification 595–Pest Management)

Chemical or mechanical. Producer's plan for use of herbicides, rates, and application: _____

DISEASES AND INSECT CONTROL: (See FOTG, Section IV, Practice Specification 595–Pest Management)

Producers plans for disease or insect control if problems should occur: _____

Chemicals used in performing this practice must be federally, state and locally registered. They will be applied strictly in accordance with authorized registered uses, directions on the label, and other federal, state, and local regulations.

The crop rotation, in combination with other supporting practices, must include enough high residue producing crops to protect soil from erosion (planned to "T" or below). High residue crops include corn or sorghum for grain, small grains harvested for grain, alfalfa and grass cut for hay, winter cover crops, or the addition of manure (10 tons per acre is approximately equal to 20-30% residue).

DECISION TO RECROP: The two major factors in deciding to recrop in a flexible crop rotation are the annual available water and the stored subsoil moisture available determined just prior to planting. Approximately 9 inches of plant available water, at a minimum, is needed to produce a small grain crop. For every additional inch of plant available water 4–5 bushels per acre yield may be expected. Available water is stored soil moisture plus the potential growing season precipitation expected at the 70 percent probability level. The upper 4 feet of soil is used to calculate the stored soil moisture. It should be noted that this method assumes adequate weed control and adequate fertility levels to meet production goals.

In a dry year the legume is terminated as green manure. If good moisture prevails the crop can be maintained for forage or seed production. Subsoil moisture must be monitored regularly and the crop terminated before excess subsoil moisture is extracted.

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Flexible Legume–Cereal Cropping

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MT-ECS-328C-3
07/2002

Use the following calculations to determine when to **recrop**:

Planting Spring Crops:

_____ inches stored soil plant available water (measured in spring)
+ _____ inches growing season precipitation – 70% probability
_____ TOTAL inches plant-available water for growing season

Planting Winter Crops:

_____ inches stored soil plant available water (measured in fall)
+ _____ inches average winter precipitation X adjustment factor
+ _____ inches growing season precipitation - 70% probability
_____ TOTAL inches plant-available water for growing season

ATTACHED SPECIFICATIONS

- | | |
|--|--|
| <input type="checkbox"/> 324–Chiseling and Subsoiling
<input type="checkbox"/> 329–Conservation Tillage System
<input type="checkbox"/> 340–Cover Crop
<input type="checkbox"/> 344–Residue Management, Seasonal
<input type="checkbox"/> 392–Field Windbreaks
<input type="checkbox"/> 422A–Herbaceous Wind Barriers
<input type="checkbox"/> 449–Irrigation Water Management | <input type="checkbox"/> 571–Soil Salinity Management
<input type="checkbox"/> 585–Contour Stripcropping
<input type="checkbox"/> 586–Stripcropping, Field
<input type="checkbox"/> 589B–Cross Wind Stripcropping
<input type="checkbox"/> 609–Surface Roughening
<input type="checkbox"/> 610–Toxic Salt Reduction
<input type="checkbox"/> 633–Waste Utilization |
|--|--|

APPROVALS:

NRCS Conservationist

Job Approval Authority

Date

Producer

Date

INSTALLATION CHECK:

This Practice Meets NRCS Standards and Specifications.

NRCS or NRCS Certified Crop Advisor

Date

Specification MT328-C-4
Flexible Legume–Cereal Cropping

NO INFORMATION